1: Karsten--115[2] (1916-18) 1935 Jivaro
116, 262, 241 (1928-29)

"A considerable number of edible plants are cultivated by the Jibaros, and vegetable food is as a matter of fact never lacking in a Jibaro house. The most important of these plants are the manioc and the plantain or banana, but in addition they raise crops of sweet potatoes and another kind of potato which is a vine and called kingi, maize, a kind of carrot, earth-nuts, beans, and some other edible plants of minor importance."

1: Karsten--122-123 (1916-18) 1935 Jivaro-1
116, 241, 774 (1928-29)

"The agricultural practices of the Jibaros and the Canelos Indians are founded on a special animistic view in regard to the plants which they cultivate. All trees and plants are animated by spirits--the Jibaros call them wakańi, the Canelos Indians aya or supai (1)--who affect their growth and the ripening of their fruit. These wakańi, aya, or supai are to the Indians nothing but spirits or souls of men which have taken up their abode in the plants and have thus become plant souls. The animistic philosophy of these Indians does not recognize any particular kind of plant spirits as distinct from spirits of men, just as it does not recognize particular animal spirits or spirits of inanimate natural objects. There is only one kind of spirit or demon, who inhabits men, animals, plants, or inanimate objects, and who may also permanently or occasionally exchange one form of existence for another. This view which, of course, is intimately connected

"1. In the Quichua language aya means 'soul' in general, whereas supai means 'demon'. All supai are aya, but all aya are not supai. According to the idea of the Canelos Indians, poisonous plants--for instance those ofwhich they prepare their arrow-poison-- and plants with extraordinarily strong properties are animated by supai, the rest by aya."

with the doctrine of the transmigration of souls, forms a characteristic feature of the religion of the Jibaros, as, in fact, of the Indian religion in general. According to the mythology of the Jibaros, all animals have once been men, and although there is not a similar myth in regard to plants, their whole animism rests upon the belief that even the plants are in a way human, namely, in so far as the spirits that animate them have once inhabited human bodies, just as they may once more, either for a longer period or only incidentally, take human form. The Jibaros speak to the plants as if they were endowed with human thoughts and feelings, and when intoxicated by certain narcotic [123] drinks--made of tobacco and two other narcotizing plants--the spirits of these plants appear to the narcotized Indian in a definite human form, namely as some remote ancestors of his. Moreover, the custom of naming women after plants is intimately connected with this belief. The Jibaros go so far as to attribute a special sex to each kind of plant; some trees and plants are supposed to be men, others--and in fact the majority of them--are said to be women.

This idea also explains the division of labour which prevails among the Jibaros with regard to agriculture. Those plants which are 'men' must be sown and tended by the men, whereas those which are 'women' must be cultivated by the women. Of those fruits that form the staple food of the Indians, most are regarded as female. Hence

among the Jibaros, as in fact among most Indian tribes, agriculture is essentially, although not exclusively, a duty incumbent on the female sex."

1: Karsten--123 (1916-18) 1935 Jivaro
116, 192, 137, 241 (1928-29)

"The following trees and plants are cultivated by the Jibaros and the Canelos Indians; the names in the Jibaro and in the Quichua language are indicated with Jib. and Qu. respectively:

Manioc (Manihot aipi, Jib. máma or tsanímba, Qu. lúmu) of many different classes, plantain (Jib. pa'ándama, Qu. palánda), batatas (Convolvulus batatas, Jib. ínchi, Qu. kumál), mani or earth-nuts (Jib. nussi, Qu. ínchi), beans (Jib. mika, Qu. poroto (1), sanahoria (Daucus carota, Jib. maya, Qu. sanahoria), maize (Jib. sháya, Qu. sára), mandi (2), (Jib. sángu, Qu. mandi), a kind of sweet potato (a vine), (Jib. kingi, Qu. papa chambo), pumpkin (Jib. yui, Qu. sapallu (3), the chonta palm (Jib. uí, Qu. chunta-rúru), and the sugar cane (Jib. pa'ata, Qu. huiru).

The Indians also cultivate the Capsicum or Indian pepper (Jib. hímya, Qu. uíchu), the naranhilla (Solanum quitense, called narangi in both languages), and the tomato which the Jibaros call kukuchi.

The gourd tree (Jib. tsáppa, Qu. pilchi) is also cultivated, but only because of the dishes and water-bottles which are prepared from its large fruit, and which the Indians use in their daily life."

"1. Spanish poroto.
2. A plant producing a fruit similar to the manioc.
3. Spanish zapallo."

"Of the numerous cultivated plants which play a part in the magical medicine and the religious customs of the Indians the following deserve to be mentioned:--

First of all we have the tobacco plant (Nicotiana undulata, Jib. tsańgu, Qu. tabacu) used partly as magical medicine, partly as a narcotic. [124]

The two other principal narcotic drinks of the Jibaros and the Canelos Indians are prepared from the vine Banisteria caapi (Jib. nateḿa, Qu. aya huaśca), and from the bush Datura arborea (Jib. maikoa, Qu. huańtuc). Both are cultivated by the Indians.

How the tobacco, the nateḿa, and the maikoa are used, will appear from descriptions given later on.

Varvasco is a common name for certain poisonous plants which play an important part in Indian fishing. They will again be dealt with in the chapter on the Indian fishing practices.

Tsinsímba is the name of a small fragrant plant, cultivated by the Jibaros, to which a magical power is attributed. The leaves of the plant are chewed and mixed with saliva (in the same way as the leaves of the tobacco), and given to the women and children at certain feasts to make them strong and active.

There is another similar plant, cultivated by the Jibaros, which is called chikí. The root of the plant is warmed up in a clay pot half-filled with water, together with some leaves of tobacco, and the drink is given to a woman at the 'feast of the women'. This

drink has the effect of a vomitory and is supposed to purify the stomach of the woman.

Among the magical plants cultivated by the Jibaros and Canelos Indians must also be reckoned the roucou shrub (Bixa orellana; Jib. ipyaku, Qu. manduru), the fruit of which affords the red dye which the Indians use for painting the face and the body.

Of the plants mentioned above, the following are regarded as 'women', that is, as being animated by a female wakani (aya): the manioc, the camote, the sanahoria, the bean, the earth-nut, the sweet potato, the mandi, the pumpkin, the gourd tree, the tsinsimba, the chiki, and the roucou shrub; whereas the following are regarded as 'men', that is, as animated by a male wakani or aya: the plantain, the maize, the chonta palm, and the narcotic plants tobacco, Banisteria caapi, and Datura arborea, as well as the varvasco.

Consistently with this idea we find, as a matter of fact, among the names of the Jibaro women such names as Maima (manioc), Inchi (camote), Nussi (earth-nut), Ipyaku (roucou) and Chiki; whereas among names of the Jibaro men we meet such as Paandama (plantain), Ui (chonta palm), and Maikoa.

As pointed out before, it is essential that the female plants be cultivated by the women, and the male plants by the men. In any kind of agriculture, however, the rough work, that is, the felling of the trees and [125] the clearing of the ground, when new plantations are made in the forest, is done by the men. On the other hand, although for instance the

plantain is always planted by the men, yet the women later on take part in tending the tree and sing incantations to promote its growth. Just as the earth-deity of the Jibaros is regarded as a woman, so the women are always supposed to exert a special, mysterious influence upon the growth of the crops."

1: Karsten--125-126 (1916-18) 1935 Jivaro-1
116, 241, 773 (1928-29)

"All agricultural practices of the Jibaros centre round the particular deity of the women, the great Earth-mother Nungüi. She has not only taught the women agriculture, but also all kinds of housework and duties incumbent on the married Jibaro women, especially how to feed and tend the principal domestic animals, the swine and hens, and the hunting dogs. In order fully to understand the Jibaro customs relating to agriculture, it seems therefore necessary to know the myth of the Earth-mother Nungüi.

In the chapters on the myths of the Jibaros I shall relate this myth in full. Here it may only be necessary to mention its main points.

Nungüi, the Earth-mother, is the being who is worshipped by the Jibaros as the originator of that important part of the Jibaro culture which is represented by the women. In ancient times, we are told, the Jibaros knew none of the plants and fruits which they cultivate to-day and they had nothing to eat. At that time there lived a Jibaro woman called Ungucha. When wandering on the bank of the river looking for food she met the Earth-mother Nungüi and asked her for manioc. Nungüi gave her manioc-beer ready made in a clay pot; she gave her plantations ready worked up and sown with manioc, plantain, batatas, maize, earth-nuts, and all other fruits which the Jibaros now cultivate; she gave her all kinds of game ready prepared. Everything was given to Ungucha gratuitously, without her having to work. But Ungucha proved ungrateful and made unjust demands on Nungüi, so that at last Nungüi left her and retired to the

interior of the earth where she still lives. Now the Jibaros would again have suffered from famine after the Earth-mother left them. But she had already taught them agriculture, to make plantations and to sow the seeds, and the fruits thus grew of themselves in due time.

Nungüi is still worshipped as the great Earth-mother by the Jibaro women--the word Nungüi itself is derived from the same root as the [126] word nuńga, 'earth'. When new plantations are made, when the plants are sown, the women never fail to invoke, in special incantations, Nungüi herself and also her mythical husband, Shakaĕma, who formerly did the same agricultural work as the Jibaro men still do, namely, clearing the ground for making new plantations. When at the 'feast of the women', or on other occasions, the married Jibaro women drink the narcotic nateḿa, Nungüi afterwards appears to them in a dream and teaches them how to tend the fields in order that they shall be very fertile. When the crops fail owing to dryness or from other causes, and famine threatens the Jibaros, then Nungüi again appears to the women in a dream consoling them: 'You will not die, the fields will again prosper all right and give you food.'"

1: Karsten--126 (1916-18) 1935 Jivaro
116, 241 (1928-29)

"I have mentioned that an intrinsic connection is supposed to exist between the woman and the plants which she cultivates, just as she is believed to exert a particular influence upon the domestic animals that are confided to her care. This especially holds true of the married woman. When a Jibaro marries and has to found a new household, to make new plantations and breed domestic animals, swine, chickens, and hunting dogs, his first business is to make a special feast for his young wife, through which power and ability is, in a mysterious way, imparted to her for her future obligations. This feast--next to the head-feast the greatest feast of the Jibaros-- is called Noa tsańgu, that is, 'the tobacco feast of the women'. Fully to understand the ideas the Jibaros have about agriculture it is necessary to know the general significance of this feast."

1: Karsten--126-131 (1916-18) 1935 Jivaro-1
116, 241 (1928-29)

"The most important of the domestic plants is the manioc, and when new manioc fields are made for a feast, the work is done with special ceremonies.

To plant the manioc, two pieces of the stem of the shrub about ten inches in length, are cut off and fixed in the ground in an oblique position close to each other. Such manioc sticks are planted all along the field at a distance of one to two yards from each other.--The plant bears fruit in about six months.

The rough work, as pointed out before, is done by the men, who fell [127] the trees and clear and level the ground selected for the new plantation --extremely heavy work which takes a long time. This was especially the case in former times when the Indians had only stone axes and knives of chonta wood to use in clearing the virgin forest to make plantations. After this the work of the women begins, who further prepare the ground for the planting.

The young Jibaro woman, in whose honour the feast is to be held, is assisted at the work by an older women who will also lead the ceremonies at the coming feast and is called whuéa. Moreover, her mother, sisters, and other female relatives living in the same house, generally take part in the planting.

To begin the ceremony, the old woman (whuéa) brings a pole or stick, elaborately made of the hard wood of the chonta palm. With this pole, which is called shingi, holes will first be made in the ground for fixing the manioc stems. The latter are, at the

beginning of the work, heaped at one end of the new plantation. Close to these stems the chonta pole (shingi) is fixed well into the ground by the whuéa. Each woman is provided with a fully ripe manioc fruit upon which she sits when planting. The woman who is to make the feast and her assistants also are painted red in the face with roucou (Bixa orellana) and have red stripes on the breast and the back.

Before proceeding to work [JKM: planting manioc] the women sit down round the heap of the manioc stems, chanting first to the stems and afterwards to Nungüi herself, calling upon her to be present and to help them in the work:

'Don't touch the stems with hard hands,
slowly, with caution may you touch them,
Although we have cut them with the iron of the whites,
may they not take it amiss;
only to cut the pieces have we used the knife.
May it do no harm; may you grow well,
may you bear abundant fruit', etc.

Then follows the chant to Nungüi herself. Besides the heap of manioc stems and the shingi, there is a third sacred object. This is a small round stone red or brown in

colour, which has clearly been found somewhere in the ground. The Jibaro women, however, pretend to have got it in some mysterious way. Nungüi herself has given it to a woman [128] in a dream, when she was intoxicated with the narcotic natema, in order that she should have luck in agriculture. This wonderful stone is called nantaŕa and is regarded as the special symbol of Nungüi, containing her soul and at the same time the soul of the manioc plant (tsanimba wakañi). The stone is therefore supposed to have the power of summoning Nungüi to help in the work, and consequently of making the manioc grow well. The nantaŕa is covered with an upturned gourd, and the women sit around it while chanting the song to Nungüi:

'Being daughters of Nungüi, the woman,
we are going to sow.
Nungüi, come thou and help us,
come and help us!
Art not thou, art not thou our mother,
are not we thy children?
Whom should we call upon?
We only behold wood and hills.
Thou art the only one who can help us,
us that are going to plant the fruit'.

In the following chant the women mention all those different kinds of manioc which the Jibaros know and cultivate, i.e.: the apáchi mámа (1), chiángrapo tsanimba, huambángtsi tsanimba, parmáchi tsanimba, wambuchára tsanimba, kapándinyu tsanimba, chachira tsanimba, nungüimēra tsanimba, sukimámа, sūtinyu tsanimba, mukúndra tsanimba, ikiánchama tsanimba, suamára tsanimba, kanūsara tsanimba, and ayándkashi tsanimba. Each kind of manioc, or rather the soul (wakáni) of each manioc plant, must be especially called upon by name in order to secure a good crop.

When the chants are finished, the women proceed to plant the stems. One of them, the first that the woman who is preparing for the feast will fix in the ground, is taken out from the rest and painted red with roucou. In a small clay pot the whueá has prepared some juice of tobacco by chewing the leaves and mixing them well with saliva. The whueá first gives the younger woman a small quantity of this medicine to drink. The latter, who is bent down for the work, has her manioc fruit placed [129] in the joint between the leg and the thigh. The whueá now takes her by the wrist and guides her hand to the chonta pole, with which she slowly and cautiously makes a hole in the ground.

"1. 'The manioc of the whites'."

Immediately afterwards the whuecá guides her hand to the manioc stem, painted red with roucou, which is held ready, and makes her place it in the hole with the same caution. Even during the latter operation the whuecá is holding her arm by the wrist.

The first manioc stem having thus been ceremonially put in the ground, the work of planting is continued in the ordinary way by the women, each of whom sits upon the manioc fruit with which she is provided, or holds it between the leg and the thigh in the same way as the first woman.

After the work [JKM: planting manioc] is finished, the old woman fixes the chonta pole (shingi) well into the ground at the end of the field where it is then left. The idea is that just as the shingi is firmly planted in the ground, so also the manioc which the women have planted will grow steadily and without disturbance. It still remains, however, for the women to chant to the shingi itself. Sitting round the pole they sing the following chant by which, at the same time, Nungüi and her husband Shakaĕma are 'awakened' in order that they may take notice of the planting just finished and promote the growth of the crop.

This chant in the Jibaro language runs as follows:

Shingi wairu tu tahei,
'Lifting up the earth with the shingi we have
done the work (of planting),
tu aweiru shindyantamrya,
Thus we have digged in the earth to awaken thee,
tu tahei, ty tahei.
Thus we have done, thus we have done.
Nungüi noachi assana
Being daughters of Nungüi, the woman,
huí tu tahei, tu tahei.
thus here we have done.
Mamankutu untsuaheita,
May thou multiply our crop of manioc,
shindyantamrya, shindyantamrya,
wake up, wake up.
Aishiru kutu, tsukahei vaitya, [130]
Dear husband (1), myself I am hungry,

"1. i.e., Shakaĕma, the husband of Nungüi, whom the women invoke as their own husband."

aishiru´kutu´, tsukama´huahua´.
my husband, hungry is also my child.
Shindyantamrya´,
Wake up, wake up,
wari kureitkura´.
quickly appear!"

This chant is sung to the same melody as the other incantations at planting and sowing. An example of it will be given later on.

The shingi, as we note, is used not only for making the holes into which the manioc stem are planted, but also with a view to awakening, by the digging, Nungüi herself and her husband, who are supposed to dwell in the earth and may perhaps be sleeping.

When the women return to the house, each of them carries in a basket (changina) the manioc fruit on which she has sat at the planting. The manioc is at once cooked and eaten by the women, who in eating do not touch the food with their fingers, as is generally done, but use small wooden sticks to eat with.

For some time the woman who is the owner of the plantation and is preparing for the tobacco feast, besides observing the rules of diet mentioned above, takes care not to drink the strong tonic guayusa (prepared from the leaves of the Ilex), which the Jibaros

use as a vomitory and for washing out the mouth. If she takes guayusa, the tender manioc plantation may dry up. The same would happen if she tasted the brandy of the whites. Nor does the woman, after the work of planting, paint her face with sua (genipa). The black paint prepared from this fruit is very astringent and would therefore make the manioc dry up. Some Jibaro women also take care to loosen the cotton bands (called patáki), which they usually have tied round their upper arms. If the arm is tied with this band, the manioc will likewise be 'tied', so that it cannot grow and develop.

Later on, when the women tend the new manioc plantation and clear it of weeds, they likewise usually chant incantations to Nungüi and the manioc spirit.

Moreover, there is a special danger threatening the tender plant [JKM: manioc] from the machinations of evil witches. A witch-doctor of an enemy [131] family or tribe comes and sees the new plantation, grows jealous, looks at it with an evil eye (tuna hĩ ĩsasama), and pronounces a curse that the whole thing may be spoiled.

'I have seen the shingi which they have fixed at the end of the field, May everything get spoiled, may the whole plantation rot away, may it turn into forest, may nothing grow there, so that they may have nothing to eat."

In order to counteract the effects of this malediction and the evil eye of the witch, the women also chant incantations while tending the plant. --"

h: Karsten--III (1916-18) 1935 Jivaro
116, 241, 462 (1928-29)

"Next to the manioc, the plantain is the most important of the fruits that are especially sown or planted for a tobacco-feast. The sprouts of the plant are put into the ground by the men, namely, by the husband of the woman assisted by other male relatives, without particular ceremonies. The success of the work, however, the rapid growth and fruitfulness of the plantation, depend to a great extent on the strict observance of the rules of diet which are imposed upon the husband as well as upon his wife.

After the Jibaro has planted the plantain he, moreover, for some time after takes care not to drink guayusa (weisa) or to wash the mouth with this tonic, believing that otherwise the root of the plantain will rot away. The same would happen if he painted his face or head with genipa (sua), which therefore he avoids using."

"The Jibaros also try to promote the growth of the plantain by incantations, directed to Shakaĕma, the husband of Nungüi. This, however, does not take place at planting, but some months later when the plantain has already grown large. Both the women and the men sing, sitting inside the plantation. The incantation has reference not only to the plantain, 'the son of the tumba', but also to the manioc, now half-grown; hence, besides Shakaĕma, Nungüi is also mentioned in it.

The incantation, which is sung to the same melody as the last one, runs as follows:

Tumbá uchiru apuhkahei,
'The son of the tumba I have planted,
pingéra ahásahei.
nicely I have put the sprout in the earth.
Shakaĕma aismanguchi, aishmangú,
Shakaĕma, man in the earth,
aramú ityursan tsapaicheindyá. [132]
why don't you promote my plantation?
tsapaicheindya, tsapaicheindya.
Why don't you make it grow, why don't you make it flourish?
Tumbāru, waiari, waiari,

My plantation of tumbe (1), promptly make it grow,
winchúra, waiari, waiari;
my plantain, promptly, promptly make it develop!
pand'machiru, pand'machiru
My little plantain field,
ityurusán tsapaicheindya
why don't you make it flourish?
Nungúi nuachina, nuana,
To Nungúi, also, the woman, we sing:
wambagrura (1), waiari, waiari,
Our manioc sowing, quickly, quickly make it grow!
Shakaérma, aishmanguna, apuca,
To Shakaérma, the husband, as well, who planted the plantain,
pingera, tsapaitai, tsapaitai,
make it nicely grow, make it flourish!

"1. The Jibaros here poetically speak of the tumbe, the mythical ancestor of the plantain, as if they cultivated also that plant."

winchura (2), waiari, waiari.
My plantain field, quickly make it grow!
Araki, ityursan tsapaicheindya,
My sowing, why don't you promote it,
(i) tyursangi tsapaicheindya.
why don't you promote it?
Ivyarkamrusmá, ityursanginú
Having nicely cleared the ground,
tsapaicheindya, tsapaicheindya.
why don't you make it flourish?'"

"2. wambagrúra and winchúra: poetical expressions for the manioc and plantain fields, instead of mamáru (mamanchíru) and pand'máru (pandmachíru)."

"A Jibaro woman who is preparing for a tobacco feast generally sows also batatas (inchi), sanahoria (maya), the kind of potatoes called kingí, beans (mika), earth-nuts (nússi), and the root called sangu. Besides this the men have to sow maize (shaya). Of these plants, the beans, the earth-nuts, and the maize are of special interest because of the rules in regard [133] to fasting to which the women or men are subject after the sowing, and which must be observed whether the sowing is done for a tobacco feast or not. Sundry plantations of manioc, plantain, beans, earth-nuts, maize, and so forth, are of course frequently made by the Indians without particular reference to a feast.

I shall presently give an account of the practices which the Jibaros and the Canelos Indians observe at the sowing of beans, earth-nuts, and maize, especially as regards fasting. For the moment it is necessary to mention certain other customs connected with the making of new plantations, which take place especially when the work has been done on a large scale for a feast.

When the whole work of sowing and planting is finished, the women perform certain ceremonies in the house, consisting of dancing and chanting, in order to make the new fields grow well and secure a good crop. During five successive nights, from sunset to dawn, they perform a ring dance called Ihiámbrama in the house of the principal wŏman (i. e., the woman who will make the feast), wearing festival dresses and rattles

round the cincture, and singing incantations to Nungüi and her husband Shakaĕma. These incantations are much the same as those sung before when sowing the plantation, and they are also sung later, at the great fertility feast itself, the Noa tsangu.

The following is an example of these incantations.

Kashi ningi
'At night united we sing,
Nungüi noa assana,
being daughters of Nungüi, the woman,
Nungüi noachina:
to Nungüi, the woman, we sing:
mama untsuaheita,
Multiply the manioc,
inchi untsuaheita,
multiply the camote,
nussi untsuaheita,
multiply the earth-nuts,
kingi untsuaheita,
multiply the potatoes,

sangu untsuaheita, [134]
multiply the sangu,
ashi, ashi untsuaheita.
everything multiply!
Nungüi noa assan kutú,
Being daughters of Nungüi, the woman,
we imya untsumarahei.
we thus have called upon her.
Nungüi noachina, noana,
To Nungüi, the woman,
arutama nunganuma,
the Old One who lives in the earth,
Nungüi noana tu tihei:
to Nungüi, the woman, thus we have sung:
yurúmgachi úntsuaheita,
Promptly multiply thou our crops,
mamankutú úntsuaheita,
multiply our crop of manioc,
inchikutú úntsuaheita,

multiply our crop of camote,
nussikutú úntsuaheita,
multiply our crop of earth-nuts,
sangu, sangu, úntsuaheita,
multiply our crop of sangu,
ashi úntsuaheita.
everything multiply!
Shakaĕma aishmanguchi,
Shakaĕma, the husband, as well,
amisha húi úntsuaheita.
may thou fructify the crops!
Amisha ni, kambungisa,
Thee also, who hast felled the trees,
ivyarsamunmá,
who hast cleared the ground,
imya untsumárahei:
thus we have called upon:
Mamankutú úntsuaheita,
Multiply our crop of manioc,

inchikutú úntsuaheita,
multiply our crop of camote, [135]
nussikutú úntsuaheita,
multiply our crop of earth-nuts,
ashi, ashi úntsuaheita.
everything, everything multiply"!

Other chants, sung on the same occasion and in connection with the dance, are directed against certain enemies of the new plantations, the rats, rabbits, and other rodents, which eat the tender sprouts or dig [136] up the seeds sown in the fields of the beans, the earth-nuts, and the maize.

The plants, however, are more infested with these enemies at a later period, or more strictly speaking, when the fruits are ripening. The rats then especially damage the manioc, plantain, and camote fields. In order to exorcise this danger and protect the crops the Jibaro women perform the following ceremony. They take the shell of a manioc fruit, which has been eaten by the rats, and put some ashes into it. Upon this shell they put the shell of a plantain, gnawed by rats, together with some ashes. Lastly, upon these shells they put a third shell of a camote, gnawed by the same rodents, the shell being likewise strewn with ashes. All three shells are Then placed in a piece of an old, broken clay pot (called hakáchi). The women now form a ring round the broken

clay pot containing the three fruit shells and begin to dance, singing a sort of chant or incantation to expel the rats.

This incantation runs as follows:

Katipichi, pand'machiru,
'Little rat, my crop of plantain,
Katipichi, inchichiru
little rat, my crop of camote,
takarseipya, takarseipya.
don't touch it, don't touch it!
Mamanchiru takarseipya,
My little manioc crop, don't touch it,
takarseipya, takarseipya.
don't touch it, don't touch it!
Winya mamaru,
My manioc field,
winya pand'maru,
my plantain field,
winya inchiru,
my camote field,

takarseipya, takarseipya.
don't touch it, don't touch it!
Yapamikipya,
Don't eat my crop at night,
Yapamikipya,
don't eat it at night!" [137]

After the dance is finished the broken clay pot, with the fruit shells which it contains, is thrown away into the forest. The rats are now believed to leave the plantations unmolested.

With regard to the ceremony just described it must be mentioned that the Jibaros make use of broken clay pots (hakáchi) at certain cathartic rites, when they want to get rid of something that is dangerous, impure, and detestable. Ashes, again, are regarded as an antidote against evil spirits.

Among the Jibaros and the Canelos Indians the earth-nuts, the beans, and the maize are sown with special care, and the men or women who do the work must afterwards observe certain strict rules with regard to their diet, even when the sowing has not been done particularly for a feast. This seems to be due to the fact that the plants mentioned are more delicate than other domestic plants, the sowing being easily damaged or spoiled from various causes.

1: Karsten--132-139 (1916-18) 1935 Jivaro-8
116, 241 (1928-29)

When earth-nuts are sown among the Jibaros, the women who take part in the work have their faces painted red with roucou, transverse red strokes being likewise painted over and below the chest and on the [138] back. Moreover, each seed put in the ground is painted red with the same dye. If one asks the reason for this practice, the Jibaros only answer that it is a custom handed down from their ancestors that when earth-nuts are sown both the women themselves and the seed must be painted red in this way. Otherwise the plant would not flourish.

When the work is finished, the women perform the dance Ihiámbrama for five successive nights in the house, incantations being sung to Nungüi, just as after the planting of manioc. Chants are likewise sung to prevent the rats from harming the new sowing.

For some months afterwards, or until the plant [JKM: earth-nuts] is nearly full-grown, the women have to observe the following rules of diet. They are not allowed to eat the flesh of the howling monkey (yákuma) or of the squirrel (kunámbi); nor must they eat the intestines (ambúhe) of any animal, blood, the fat of swine, tadpoles (wambúcha), fish roes (téri námaka), a crab living in fresh water called uriki, or snails (tsuntsu), nor chew sugar cane. Of vegetables they are forbidden to eat palm tops (ihu). As to fish, they must not eat the two large fishes wámbi (Spanish bocachupa) and the sheat-fish (nápi).

These rules of diet are based on the following ideas. The fell of the howling monkey and the squirrel is reddish-yellow, as if it had been burned by the sun. If the women eat the flesh of these animals after having sown earth-nuts, the new plants will soon have the same reddish-yellow colour, that is, they will be burned by the sun and dry up. If the women eat the intestines of various animals, the plants will soon fall asunder in small pieces and be spoiled. The same will happen if they eat things that flow, or that easily melt away and vanish, like blood, the fat of swine, and the sweet liquid contained in the sugar cane; or that are of a very loose consistency so that they easily dissolve, like tadpoles, fish roes, and the flesh of the crab and the snail. The plants will lack consistency, dissolve, and be spoiled. For the same reason the women must abstain from eating the palm top, which consists of loose fibres and easily falls asunder.

That the women are forbidden to eat the fish wámbi is due to the fact that this fish has a red tail and red fins, though the rest of it is entirely white. The Jibaros fancy that the leaves of the tender shoots will soon get the same colour as the tail and the fins of the fish, that is, they will dry up.

Again, the large and strong nápi is a very lively fish, which, when caught, sprawls violently and is difficult to restrain. If the woman eats this fish after having sown, the seed will get no rest, and will not be [139] able to grow quietly, but will be continually

disturbed by some enemies (animals, violent winds, etc.) and consequently spoiled(1).

When the Jibaro women have sown the beans, they are subject to the same rules of diet for some months afterwards, or until the crop is well developed and begins to bear fruit."

"1. It is worth mentioning that when, among the Jibaros, a child is born, the father and mother for some time afterwards abstain from eating the fish nápi for the same reason. Otherwise the delicate new-born child would be tired out and get no rest."

1: Karsten--139 (1916-18) 1935 Jivaro
116, 241 (1928-29)

" Similar restrictions in regard to food are laid upon the men after they have sown the maize. Thus they do not eat Indian pepper (hĭmya), because otherwise the maize would become red and inferior in quality. Indian pepper (Capsicum), as is well known, is red in colour. They abstain from eating the larva mukĭndi, which lives in the tops of certain palms, because otherwise the maize would be infested with worms. They moreover abstain from chewing sugar cane, because in that case the maize would rot away, and from eating the top of the palm called tunduáma, because if they do eat it, the cobs of maize will become empty (without grains) owing to the effects of violent winds."

1: Karsten--139-140 (1916-18) 1935 Jivaro
116, 241 (1928-29)

"As to the sowing of the maize, it may be mentioned that the Jibaros formerly used to put in the seeds with the same care as is still used with the manioc, the trees being felled first, the ground cleared, and the plantations elaborately made. Even a chonta pole (shingi) was then used for making the holes in the ground, and the same ceremonies observed with it as at the planting of manioc. This mode of sowing the maize still prevails among the Canelos Indians. On the other hand, the Jibaros proper nowadays simply throw the seeds on the spot in the forest selected for the field and let them grow, without previously clearing the ground. It is not until later on, when the plant has a length of about 20 to 30 cm., that the trees are felled. The trunks, however, are not removed but left on the field, as they protect the new plantation against the violent hurricanes which might otherwise destroy it.

When the maize is ripe, the plant is frequently infested by maggots which enter the maize-heads under the leaves and eat the fruit. The Jibaros and the Canelos Indians then try to exterminate the maggots in the following way. They take a maize-head which is particularly infested with maggots, put some chewed tobacco leaves together with some Capsicum or Indian pepper round it, envelop the whole thing in some other leaves and take the bundle into the house, where it is hung up [140] in the smoke over the fire. Here the bundle is left for some time, until it is quite dried and half consumed, after which it is thrown away. By this procedure the maggots are supposed to disappear from the whole plantation."

1: Karsten--140-142 (1916-18) 1935 Jivaro-1
116, 241 (1928-29)

"The rules of precaution observed by the CANELOS INDIANS in connection with agriculture differ in some details from those in vogue among the Jibaros. When, at Canelos, a woman has planted the manioc, she abstains for eight days from touching a broom to sweep the house. All dirt and waste is left untouched until the eight days have elapsed. If she cleaned the house, the manioc would fall asunder and be spoiled. For the same reason she refrains, during the same period, from sharpening a knife with a stone; nor does she split the fire-wood with an axe, but instead of that uses a big knife (machete). If she touched the axe, the manioc would not grow thick but very thin like the handle of the axe.

Again, when the men have planted the plantain, for eight days they abstain from eating roasted plantain, since otherwise the fruit in the new plantation would grow very thin and small. Nor do they bathe in the river during the eight days, lest the new plantation should get too much water and rot away.

When the Canelos women have sown earth-nuts (inchi) and beans, they take care not to taste sweet things, brandy, and other strong drinks, the fat of swine, blood, the intestines of any animals, a snail living in the water (chúru) and a fat worm or larva called túku, living in the top of a certain palm and generally eaten by the Indians. If the woman infringes these rules, the earth-nuts and beans will grow very small, or the whole crop be spoiled; they also take care not to eat a certain fish called náchi which

has very sharp teeth and eats hard seeds and kernels. If the woman eats this fish, the new crop will be badly infested with rats and rabbits. For the same reason she does not eat the squirrel and the guatusa (agouti), rodents that are great enemies of the plantations of the Indians, or the parrot, which likewise has a sharp beak and eats seeds of any kind.

Having sown earth-nuts, the Canelos woman also abstains from eating and touching the flesh of the deer as well as of the nose-bear (Nasua rufa). If she eats the flesh of these animals, or even touches it with her hands, a certain ant which the Canelos Indians call rahuai añangu, 'the blood ant', will infest the sowing. The deer was formerly, and the nose-bear is still, to the mind of these Indians a demoniac animal.

[141] All these precautions are observed for two or three months, until the new plantation has grown and is well developed.

When the men have sown the maize, they too for a couple of months are subject to certain precautionary rules. They do not eat palm tops (yúyu), for otherwise the maize would grow very small, nor the larva túku, for then the new plants would rot away, the túku making the palm tops where it lives rot. Similarly they abstain from eating the harmful rodents, the agouti and the squirrel. Nor do they eat a large fish called hándya which has very sharp teeth, for then some rodents will eat the maize. When a Canelos Indian has been out hunting and returns home with some birds, he takes care

not to pluck the birds in the forest or on the way, but takes them home feathers and all. The men themselves cannot pluck them; this is done by the women or the children of the house. If the man himself plucked the birds, the leaves of the maize plant would fall asunder like the plumes of the bird, and the plantation be spoiled. With regard to a sort of woodpecker, called chili, it is considered necessary that it should be plucked in the maize plantation itself, where the feathers are then left. When afterwards the man who has sown the maize and caught the bird happens to come to the plantation and see the feathers, he immediately takes the precaution of blackening his hands with carbon and, moreover, makes cutting movements all around them with a knife. In his having seen the feathers it may seem as if he had himself plucked the bird, and the precaution mentioned will counteract the evil consequences arising from this.

Even certain plants that do not serve as food, but are cultivated for other purposes, require that the person who has planted them should, before or afterwards, observe certain rules with regard to his mode of life.

When among the Jibaros and the Canelos Indians the men plant the varvasco, they afterwards abstain from eating the intestines and blood of animals. They are also forbidden to eat the small fish called sachma; nor do they drink strong drinks like brandy, guayusa, and the narcotic natéma (aya huasca). They cannot touch the blood of the

agouti nor skin that animal or take out the intestines. Roasted plantain they do not eat; in that case the varvasco will dry up. The intestines of animals--also parts like the lungs, the heart, the liver--they cannot eat because the plant would rot away. Brandy, guayusa, and natéma they cannot drink, because these strong drinks would have harmful effects upon the plant. [142]

These rules must be observed until the varvasco is half-grown. After the Indians have put the shoot in the earth they blow chewed tobacco and strew mashed Indian pepper upon the plant, which will have the effect of making the varvasco poison strong.

When the Jibaro men have to plant the narcotic plants natéma and maikoa, they abstain for some days previously from cohabiting with their wives. When engaged in the planting work they must be 'chaste as youths', otherwise the plant will soon dry up. This custom is, at all events, observed by some Jibaros. Others, on the other hand, have asserted to me that they do not observe particular precautionary rules in connection with such planting.

When the Indian women have planted the gourd tree, they afterwards strike themselves with the hands on the breasts, in the belief that thus the fruit of the gourd tree will grow large like the breasts of the women. When the tree has grown big, the Canelos women are in the habit of hanging the shells of the forest snail (called chúru) upon its branches, in order that it shall bear large and abundant fruit."

2: Stirling--107[2] (1930-1931) 1938 Jivaro
116, 241, 262, 462

"Although the Jivaros receive a considerable part of their subsistence from the products of the chase and from fishing operations, they might safely be termed a truly agricultural people. Maintenance of the gardens is almost solely the duty of the women. The only portion of the labor of preparing and maintaining a garden clearing which is done by the men consists in the felling of trees in making the original clearing. The planting, care, and harvesting of the crops is all women's work.

Sweet manioc, taken in the form of nijimanche, constitutes the most important single food item. The boiled fruit of the chonta palm is likewise used to form a drink prepared in the same manner as nijimanche. To a lesser degree, maize, sweetpotatoes, sugar cane, squash, and peanuts are raised. As a general rule, a good-sized garden clearing surrounds the jivaría itself, but frequently additional fields are maintained which are a mile or more distant. Bananas, plantains, and papayas are grown extensively, but require no care other than planting."

2: Stirling--107[3] (1930-1931) 1938 Jivaro
116, 241, 412, 482, 462

"The ground is not tilled in any fashioned. The only agricultural implements are a digging stick and a planting stick; frequently, the same implement serving both purposes. A typical digging stick is made of hard chonta palm, is about 4 feet in length, 1 1/2 inches in diameter, and is flattened at one end (pl. 23, a). The manioc is planted by taking small shoots from growing plants and placing the stems in shallow holes punched in the ground with the digging stick. The earth is then packed around the stem with the fingers and the plant requires no further care, the moist ground and the more or less continual rains doing the rest. The roots of the manioc are usually harvested when about a foot in length. If permitted to grow to a much larger size the tubers become coarse and woody. In harvesting manioc, which is one of the principal routine duties of the women, the tubers are excavated by means of the digging sticks, placed in the carrying baskets and borne by means of a head strap from the gardens to the house. This is no inconsiderable task, especially where the fields are at a distance over steep mountain trails from the jivaría (pl. 23, b)."

2: Stirling--108 (1930-1931) 1938 Jivaro
116, 252, 241

"Bananas and plantains, as is customary in the region of the eastern Andes, are seldom permitted to ripen. When the fruit is mature the bunches are picked. The bananas or plantains are first peeled and then either boiled while green or roasted in the coals of the fire. The Indians prefer it in this mealy and tasteless fashion rather than in the form of ripened fruit."

2: Stirling--108 [4] (1930-1931) 1938 Jivaro
116, 241

"The combination of fertile soil, warm and abundant rainfall, and mild temperature causes the various agricultural products to grow rapidly and luxuriantly. No finer bananas or plantains are to be seen anywhere in the world."

4: Up de Graff--202-203 (1897) 1923 Jivaro
116, 221, 361, 241

"The Antipas, then, are semi-nomadic. The year for them is divided into three parts, not corresponding to the seasons as we know them, but to the capacity of the crops which they plant for keeping them alive; that is to say, they have three distinct homes, some ten or twenty miles apart, each with its own clearing (chacra in Inca), between which they divide their time. At each homestead they plant fresh crops before leaving for the next, living the while on the produce they find waiting for them on arrival, the result of the last sowing. Each crop takes about eight months to mature, on an average. The exception, of course, is the banana-plant, which bears fruit for many years; the old plant dies each year, after bearing one bunch of fruit, but automatically there spring [203] up round the roots fresh shoots which bear the next year.

Living as they do well to the west of the area which is annually inundated, and consequently being free from dependance on the seasons, they can sow at any time of the year, with the certainty of reaping at the end of the unvarying number of months which are needed in order that the crop may ripen. Yuca, for instance, is ready in six months; Indian corn in three months; yams (a potato which grows three to four feet in length and fifty pounds in weight) in a year; sweet potatoes, peanuts, and tobacco are also cultivated in large quantities."

4: Up de Graff --203-204 (1897) 1923 Jivaro-1
116, 241, 412

"If you saw the one-handed stone axes which are the only tools these people have with which to fell the enormous trees, many of them three to five feet in diameter, to make their clearings (often five acres in extent), you would wonder how it were possible to accomplish this feat. It is a feat of patience rather than of skill. The wood is not cut, but reduced to pulp, six or eight men working round one tree at the same time.

The first step in making a chacra is to remove the undergrowth; the soft stems are cut with hard-wood machetes, what can be torn up by the roots is torn up, and the small saplings are snapped off by main force. Then the attention of the workers is turned to the larger trees. A ring is cut round the trunks of all the trees within a radius of, say, a hundred feet of some picked giant, enough to weaken them, and prepare them for the final strain which breaks them off. Finally the giant itself is attacked by a party with axes which works for days and weeks, until at last there comes a day when the great trunk has been eaten away sufficiently for it to crack and fall. But it does not fall alone, for it drags with it all the smaller trees in its vicinity which are bound to it and to one another by an unbreakable net[204]work of creepers among the upper branches. With a rending crash, a hole in the roof of the forest is made, and the sunlight pours in. At the same time the Indians pour out, leaping for their lives not only from the falling trees, but from the myriads of ants, bees, wasps, hornets, scorpions and centipedes which have been aroused. Worst of all is the iuturi (Inca), a dark red ant an inch and a half in length, which stings with its tail the moment it touches flesh, unlike any other poisonous

insect or snake in those woods; it does not wait to be disturbed but attacks of its own accord. I have even seen one make its way along the canoe rope, which was purposely passed under the water for a distance of two or three feet as a protection against crawling things. It must have been immersed for a full minute.

After leaving the trees to lie for several months during the dry season, the Antipas fire them, a process which eliminates all the smaller limbs and bush, leaving only the trunks, to deal with which they have no tools. I have examined the stumps of these fallen trees many a time; they resemble in every respect those of a clearing made by beavers."

5: Reyes and Teran--103-104 (No date) 1939 Jivaro
116, 241

"Among the cultivated plants the following are outstanding: sugar cane, the plátano [GCB: plantain, or banana, tree and fruit], the yuca [GCB: yuca or cassava plant?] which are easily the basic item in the diet of the natives; the pelma, whose bulb has some similarity to the potato; the camote [GCB: sweet potato], the café [GCB: coffee tree]; the achiote [GCB: arnotto tree]; the tobacco plant, the algodón [GCB: cotton plant]; the arroz [rice] plant; the maíz plant [GCB: maize or Indian corn]; the papaya, the piña [GCB: pineapple]; the guaba [guava]; the chontaruro; the guayaba [GCB: fruit of the guava tree]; the orange; and many other fruit trees which yield rapid and abundant crops. Water, light and warmth, the decisive factors [104] in the development of plants, are the patrimony of the Oriente lands. To these factors is due the vigor with which they increase and multiply. Unfortunately, the isolation of these vast regions prevent these cultivated plants from being useful for any more than local consumption."

12: Rivet--590 (no date) 1907 Jívaro
116, 241

In the cultivated land which surrounds the house, there are a great many chontaruru plants (Guilielma speciosa), the fruits of which, with its yellow, nutritive, and tasty pulp, weighs 4,500 to 7,000 gr., an abundance of banana plants and manioc (Manihot aipi), sweet potatoes (Convolvulus batatas), and often maize and cotton.

18: Hermessen--443 (No date) 1917 Jivaro
116, 241

"Yuca of the bitter variety (Manihot utilissima), maize (Zea mais), plantains (Musa paradisica), and ground-nuts (Arachis hypogaea) were cultivated for food, each house having its own garden plot in the same clearing, as well as a larger plantation some way off."

20: Dyott--181-182 (no date) 1926 Jivaro
116, 132, 241

"At the first streak of dawn, Napi took his departure. There was no elaborate leave-taking. Conversation simply reached a crescendo, and after the climax, the final word, 'pumata' was spoken in subdued tones. With this brief farewell the visitor disappeared down the pathway and the jungle swallowed him up.

After breakfast, Johnston and myself joined the ladies on their daily excursion to the family banana patch, as there was not much chance of hunting when issues of life and death were at stake. Kuashu was the only man to accompany us, the others remaining at home engrossed in their warlike preparations.

It was a very dreary morning. Rain threatened any moment and the water-logged clouds dragged themselves wearily over the tree-tops. Within ten minutes after starting, we found ourselves on the edge of a substantial clearing, half of which was planted with yuca and banana, the remain- [182] ing portion being barren. It was not even ready for planting, as the trees had only recently been felled. Some of the clearing had received a preliminary burning off, but most of the wood was still green. Huge trunks lay prostrate on the ground, and as we clambered over them Johnston remarked that the word 'clearing' was very inappropriate for a place so littered with obstructions."

20: Dyott--182
116, 241, 462

(no date) 1926

Jivaro

"The felling of trees and other work connected with the making of clearings, falls on the shoulders of the men and is one of their most arduous duties. Wherever the forest growth is small and stunted, the ground is obviously of poor quality for agricultural use. On the other hand, wherever the soil is rich and deep, the trees are of great size and their removal is no easy business. The usual procedure is to cut down all the underbrush around the roots of the largest trees first, and when this has all dried out, to set fire to it. It is then easier to tackle the big fellows. The real giants are generally ringed about their base, so that they die and are more easily handled afterwards. A second burning gets rid of a lot more rubbish, but it will be some time before the ground is reasonably clear. Nothing is carted away. What won't burn is allowed to rot where it falls. So with the combined effort of time, fire and rough axes, the land eventually becomes suitable for cultivation. The circumference of many a tree is so great that it is beyond such primitive methods of handling. The trunk will therefore be cut off forty feet above the ground, or in many cases, left standing where it is, a gaunt skeleton of spreading branches."

"While we were rummaging about the clearing, the women were busy cutting down a solitary bunch of bananas. They made a lot of work out of so simple a task, just as Kuashu did over chopping up a few logs. A banana tree produces but a single bunch of fruit. When that has been cut, no further bunches appear, and the stem can be cut away. It is soon replaced by several other shoots or suckers that have sprung up about its base. In this way, the plant spreads, and from a single shoot stuck in the ground at the outset a small forest of banana stems will eventually sprout. What with rotting tree-trunks lying on the ground and the constant lopping-off of banana stalks as the fruit reaches maturity, an Indian plantation does not present a very orderly appearance. To add to the confusion, many trees get blown over by the wind, especially if laden with a heavy bunch of fruit.

Bananas are never left on the tree to get ripe. They mature better if cut green and hung up in a house. The sight of ripe plantains is unusual. There are so many hungry mouths waiting to be fed that everything is consumed as soon as it is picked, and it never gets a chance even to turn yellow. My preference was always for the ripe fruit. In the green state, I found plantains stodgy and tasteless, although I believe if you eat them long enough, you will always end up by eating them green. Probably the slight sweetness of the mature fruit palls on one after a time, but I never reached that stage myself. The banana or plantain of the Indian must not be confused with the [184] sweet fruit varieties we are accustomed to see on sale in our own country. The latter, if

cooked, would be too sickly for words; but the plantain, even when ripe, is very tasteless, and the process of cooking seems to bring out the flavour much as it does that of a sweet potato."

20: Dyott--184-185 (no date) 1926 Jivaro
116, 241

"It was amusing to watch these Indian women at work. They talked like magpies, continually stopping to relate some story or other. When the bunch of bananas had been collected, they moved off to the yuca patch and proceeded to pull off a number of selected plants by the roots, having [185] first of all cut off the branches. The roots did not lie very deep in the soil and it was surprising to see how many of these carrot-like vegetables could be obtained from a single bush. Some individual specimens measured two feet long and eight inches in diameter, but the majority averaged ten inches by three. The yuca is one of the chief sources of food amongst the Indians. Yucas grow very much like potatoes and have to be eaten within a day or two, otherwise they go hard and won't cook properly.

When a sufficient quantity of roots had been collected by the women, they were put into wicker baskets ready to carry home. The area from which the roots had been dug was then smoothed over and stalks from the original plant stuck back again into the ground. Eight months later, each of these would again produce roots of sufficient size to harvest."

25: Vigna--39 [4] (no date) 1945 Jivaro
116, 776, 241

A special Principle, similar to a goddess, presides over the sowing. They direct songs to her in order to propitiate her.

26: Brüning--66 [2] (1902) 1928 Jívaro
116, 241, 462

Vegetarian foodstuffs are no less numerous than animal foods. We have to distinguish between cultivated and wild-growing plants. The former include the yucca (máma, non-poisonous Manihot), the banana (pandáp), the ground-nut (dúse), and perhaps the sweet potato: camote, (íntši).

As a rule, the fields are in the middle of the forest. Here the man cuts the trees in order to make a clearing. Today he uses bartered steel axes, made in U.S.A. Not so long ago they are said to have used stone axes. In spite of my inquiries I have not been able to see one of these. The rest of the work--the burning of the branches (they leave the burned trunks in the fields), sowing, and harvesting--is done by the women.

The foremost cultivated plant is the yucca (máma). It is the basis for the masato (term used by the whites), the Indian beverage, called nijamántši in the Aguaruna language.

28: Tessman--351 [3] (No date) 1930 Jivaro
116, 241

Banana--maxętši. They have only the non-poisonous type of manihot (see Glossary). White yam is called kŏngĕ by the Aguarunas and kingii by the Atschual Indians. Pale violet yam is kaímpi. Groundnut: njósi. Makabo =sangu (according to Karsten). Sweet potatoes: íntsi. Pumpkin: yui (according to Karsten). Guilelma-palm: uí.

28: Tessman--351 [5] (No date) 1930 Jivaro
116, 241

Holes are made and bulbs are harvested with the dibble: wɛ̨i (shingi according to Karsten.)

28: Tessman--351 [6] (No date) 1930 Jivaro
116, 241, 462

Karsten is our authority (in his Contributions, pp.1 ff.) for the following information: Indian corn, Plantain, and Guilelma palms are planted by the men; the other useful plants by the women. This division of labor is related to the Chiwaro belief that Indian corn, Plante, and Guilelma have masculine souls, while the other useful plants are endowed with feminine souls. About the Nüngi, i.e., the good demon of the earth, see Part III. Useful plants are planted in a ceremonial manner, and in this connection they use a great deal of fertility magic. According to Karsten (Contributions, p. 5) the Chiwaros also plant beans (mika).

32:Harner E-5 (1956-1957) 1962 SD9 Jivaro SD9

ŋ English *ng* in *sing* (followed by a hard *g* sound when not the terminal phoneme)
p Spanish *p* (voiced like English *b* when following a nasal consonant; labialized when preceding *ẽ*; palatized when following *ẽ* or *i* plus a nasal consonant)
r Spanish *r*
s Spanish *s*
š English *sh*
ts English *ts* in *cats*
t Spanish *t* (voiced like Spanish *d* when following a nasal consonant; palatized when following *ẽ* or *i* plus a nasal consonant)
w English *w* (but voiced like English *v* when adjacent to *i*)
y Spanish *y*

Unvoiced vowels (restricted to ultimate syllables) are capitalized. Stress is on the penultimate syllable unless otherwise noted. A tilde indicates nasalization.

[2] A more detailed presentation is intended for inclusion in a future monograph.

[3] The fieldwork was sponsored primarily by the Henry L. and Grace Doherty Foundation, with supplementary grants provided by the Department of Anthropology and the Museum of Anthropology of the University of California, Berkeley; by the American Museum of Natural History; and by the American Anthropological Association (SKF contract grant). John H. Rowe of the University of California contributed greatly to the undertaking of the fieldwork through his encouragement and advice.

[4] I wish to acknowledge my debt to these two previous fieldworkers. Their material provided innumerable leads for investigation and made my own research much more productive than it otherwise would have been.

[5] Arutam may also be pronounced *arutma*, since the final vowel and consonant are interchangeable, as is the case with many Jivaro words. See Turner (1958) for a discussion of this and some other linguistic aspects of Jivaro.

[6] Jivaro faith in the existence of arutam souls is so strong that all persons interviewed on the subject, even adolescents raised in mission boarding schools in the Río Upano valley, expressed a complete conviction in their reality.

[7] One of the members of the party may drink an infusion of *maikua* (*Datura* sp.) instead of tobacco water. Usually this is a person who has never seen arutam and therefore takes the drug to increase his chances of success. The other members of the group abstain from maikua in order to be able to restrain and protect the delirious person under its influence.

[8] One exception is the fireball arutam which only vanishes silently when touched.

[9] Persons who have seen arutam can be surprisingly well singled out by this trait alone.

[10] There is also a rare super-arutam, *amuag*, whose soul is not so easily satisfied and does not leave the body of its possessor when such declarations are made.

[11] The arutam soul resident in the body of a person is *not* his *own* soul in any permanent sense, but only the soul of some ancestral Jivaro dwelling there temporarily.

[12] Visitors to the Jivaro are usually impressed by the near-shouting which typifies conversations between Jivaro of different households and neighborhoods. The functional basis for this custom can be seen in the desire of the individual to advertise his arutam power by being forceful in speech and gestures.

[13] Muisak may be alternatively pronounced *muisha*.

[14] When a man does not cut off the head of a person he has murdered (i.e., when the victim belongs to his own tribe), he turns the corpse face down on the ground so that the victim's muisak is delayed in emerging through the mouth. Thus the murderer hopes to reach home before the avenging soul can catch him.

[15] A rather astonishing amount of misinformation has been published regarding the beliefs surrounding the tsantsa. I wish to re emphasise that any contradictions between the information presented here and previous accounts indicates rejection of that material.

[16] The Jivaro practice shifting cultivation and move their house locations along with their gardens.

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season,[1] and a diversified crop inventory all contribute to making a continual supply of agricultural products possible throughout the year.

Crops grown for their tubers or corms include, besides sweet manioc, two varieties of sweet potato, *papa china* (from Spanish) [taro?], and three other members of the Araceae family (*saŋu*, *tuka*, *wančup*), the carrot-like *maya* (arracacha?), and peanuts. Of these, manioc is grown in by far the largest quantity, and is the chief source of starch. The most important non-tuberous food plants are plantains and "white" maize. Other crops grown in relatively small quantities are squash, red peppers, tomatoes, onions, the "gold" banana (*guineo de oro* in Spanish), pineapple, papaya, sugar cane, tobacco, achiote, gourds, cotton. *Tsapaŋ* (for heavy cordage), various fish poisons, medicinal plants, and hallucinogenic drugs, especially *Banisteriopsis* species and *Datura arborea*, are both cultivated in the garden and collected wild in the forest.

Gardens are abandoned after three plantings of manioc, in other words, after about three to five years, because of the growing amount of labor required to clear the ever increasing numbers of weeds. New garden clearings are made nearby in virgin timber except when the actual household is being moved, in which case the gardens are planted at the new house location. This practice of shifting gardens, the so-called "slash-and-burn" or swidden technique, is made possible by the plentiful supply of land. The Jívaro recognize this method, despite the necessity of making new clearings, as involving less effort than attempting to cope with the weeds at the old site.

If a man clears the forest without the aid of neighbors, he tends to make small clearings at different times, while the rarer communal effort results in one large clearing. Whether

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241 595 the garden area is in a single clearing or several, its total size is heavily influenced by the number of wives a man has to cultivate the fields. A household with one wife tends to have a garden of about 50,000 square feet, while a second spouse increases the area to about 65,000, and a third to approximately 75,000. The areal increases are usually not simple multiples of the number of wives because the demand for food and beer to feed visitors tends to lag behind the increments in additional wives. These figures vary, of course, according to the consumption demands of the household, its number of visitors, and the industry of its inhabitants. A man who wishes to gain prestige may clear garden areas of larger size for each of his wives. In such a case, a household in which there are two wives may sometimes have a total garden of 100,000 square feet or more.

By measuring the yield within a restricted section of garden, the writer was able to arrive at a rough estimate of the quantity of a single harvest per 10,000 square feet of cultivated land. The results indicate that a "one wife" household with a garden of some 50,000 square feet may yield these approximate amounts of the major crops: 300 bushels of manioc; a total of 180 bushels of *papa china*, Araceae corms and sweet potato combined; 300 pounds of peanuts; and 90 stems of plantains and bananas.

241 595 462 606 412 The preparation of a garden begins with clearing the forest. The head of the household, sometimes assisted by a son or son-in-law, fells and trims the trees and clears the undergrowth with a steel axe and machete. His wife (wives) and daughters (if any) drag the slashings into piles, which are burned ten to fourteen days later, provided the weather is sufficiently dry. Women do not assist in making clearings for maize, since the slashings, in the case of that crop, are left unburned on the ground where they fall. Occasionally a man

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may invite his neighbors to help him make a clearing, but this practice is infrequent.

All the above crops, except maize, are planted together in the same cleared plot. Manioc plants, which are the largest in the garden, are spaced slightly less than two yards apart throughout, with the smaller plants between them. A line of plantain and banana trees separates the garden from the forest.

Crop planting is done with two aboriginal tools and the machete. The former are a sharp-pointed planting stick thrust into the soil to make seed holes, and a flat-bladed palm wood digging stick used as a lever to excavate holes for planting and digging up manioc and other tubers and corms. The machete also functions as an excavating tool in planting.

Times of planting and harvesting overlap and thereby assure a constant reaping of agricultural staples. Sweet potato, *papa china*, and Araceae species are planted at any time of the year. Sweet potato and *papa china* mature in about six months, while the Araceae tubers and the carrot-like *maya* require a year. Plantain and banana are planted during a full moon at any time of the year, and are harvested twelve to fifteen months later. "White" maize and peanuts are usually sown semiannually at the blooming of the *hutsi* flower, maize maturing in seven months, the other crop in five.

The most important crop, sweet manioc, is planted and harvested daily in the same act. As the women dig up the manioc tubers, they place several cuttings from the same plant's stalk in the old hole and partially cover them with earth. Manioc matures in ten to twelve months, but the actual harvesting can, if desired, be delayed as much as an additional year. This continual replanting of the manioc crop on a year-round basis, as the individual plants are dug up, is an important factor in the reliability of Jívaro crop production. Thus the Jívaro, in a real sense, "store" much of

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241 their food in a living state in the ground and only need to dig it up, as desired, to supply food and to make the large quantities of manioc beer which constitute a basic part of their diet.

273 The manioc beer (*nihamanchi*) is prepared by first peeling and washing the tubers in the stream near the garden. Then the water and manioc are brought to the house, where the tubers are cut up and placed in a pot to boil (see Plates 4, 5 and 10). When the manioc has become soft, the pot is removed from the fire and allowed to cool. The manioc is then mashed and stirred to a soft consistency with the aid of a special wooden paddle (see Plate 6). While the woman stirs the mash, she chews handfuls and spits them back into the pot, a process which may take half an hour or longer. The mastication of the mash is considered by the Jivaro to be essential to the proper and rapid fermentation of the brew, and their view seems to be supported by Western physicians who have informally voiced the opinion that the enzymes in the saliva, as well as the bacteria in the mouth, probably hasten the fermentation process.

After the mash has been prepared, it is transferred to a beer storage jar and left to ferment. Although the fermentation takes place rapidly, the beer is usually too much in demand to be allowed to sit very long. In being served, the beer is strained through a tree-gourd sieve to remove manioc fibers, and about one part of water is added to two parts of beer. The resultant liquid tastes somewhat like a pleasingly [271] alcoholic buttermilk and is most refreshing. The Jivaro consider it to be far superior to plain water, which they drink only in emergencies such as when their beer canteens run dry while they are out hunting. Male informants, in addition, expressed the opinion that the beer is at its best if it has been chewed by a pretty girl rather than by an old woman. Beer is also made, in a slightly different fashion (see Plate 7), sea-

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and hands with water from the gourd "bottle." Then the husband, getting up, calls to his wife to bring beer. Having drunk more beer, he lies down on the bed in the men's end of the house. He rests until approximately 5 P.M., while his wife goes to the garden, brings back manioc, and cooks it. He then gets up and tells his wife to bring beer. She carries in calabash bowls of beer. The husband then tells her to bring manioc and meat. 273 462 512 594

After this meal, his wife brings in a small pot of beer. The men take only two servings of beer apiece, and then converse. They talk about twenty minutes, and take new servings of beer. The wife stays at the side of her husband during these twenty minutes, sometimes participating in the conversation. After this second serving, the wife returns to her end of the house, and the men continue talking until dark. Then the wife brings in a copal torch and lights it. They talk once more and then drink beer again. Finally they finish the pot of beer and the wife returns to her end of the house with it. There she goes to bed, while the men continue their conversation. She rests about half an hour, when her husband calls her to serve beer. She brings a pot of it. The men drink and she remains with them. When they finish the beer, the wife returns to her end of the house, washes out the pot and the calabash serving bowl, and stores them for the night. Then she goes to bed. After half an hour, the men go to bed also, her husband joining her in the women's end of the house, the male visitor sleeping on the husband's daytime bed in the men's end of the house.

For the same household, this is a record of an alternative schedule, on a day when the husband decided to fell trees to make a garden clearing instead of going hunting. The routine up to dawn is similar: 273 462 512 313

Then he tells his wife of his intention to work clearing trees. She puts a pot of beer into a carrying basket and packs manioc [241]•

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262 feed the large number of anticipated guests, who could not
504 be supplied with enough meat from hunting alone. Normally,
765 however, the contribution of the animal domesticates, essen-
[231] tially fowl, is less than 5 per cent of the diet.
[196]

At least one or two dogs are kept in most households.
231 These not only aid in hunting in the forest, as mentioned
[224] earlier, but also protect the garden crops, including the manioc
[241] tubers, from devastation by agouti and other rodents. A fam-
ily without a good hunting dog lives in fear of losing much
of its garden produce within a few months. An equally im-
[726] portant service that they provide is to act as watchdogs
against surprise attacks. Leashed to beds in the women's end
of the house (see Plate 11), their slightest barking usually
results in the household head seizing his gun and preparing to
defend himself and his family. Since the dogs' barking in-
dicates that the intended victim has been alerted, the attack-
[825] ing party generally withdraws. Interestingly, the name for
dog, *wirud*, is the same term used to designate the feared
and respected jaguar.

The importance of dogs in hunting, protecting the garden,
and defense helps to explain the high degree of care they re-
[799] ceive. When puppies are born, one of the owner's wives ob-
serves a kind of couvade, in which she lies abed with the birth
to protect the litter from supernatural harm. A puppy is
nursed by the wife as well as by its canine mother. Even in
adult life, the dog normally sleeps on the bed beside its
owners, and is fed pronasticated manioc in a special wooden
[276] dish. Dogs, like people, are even given the hallucinogenic
Datura to help them obtain supernatural power.

The majority of households contain at least one pet be-
sides the dog. Such pets, which include monkeys, marmosets,
[419] parakeets, parrots, macaws, and doves, are captured and

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maize to crush maize for chick feed. The wooden planting sticks and digging sticks used in agricultural work have been mentioned previously.

Vessels are made by the women from clay and gourds. All pottery is manufactured by the method of coil construction and vessels are finished by scraping. Three kinds of clay are used for different types of vessels. Carbonized bark of the *apiakawa* tree is powdered for tempering material in food bowls, while sand temper is used in drinking bowls, fermentation jars, and cooking jars. All vessels except cooking jars are coated with red achiote or black beeswax after firing. Only the interiors of large drinking bowls, the exteriors of miniature drinking bowls, and the interior necks of fermentation jars are ever decorated. Even then, such decoration is usually simple and hastily made, often consisting of unelaborated irregular zigzag and dot patterns in vegetal paint. The one apparent exception is the miniature drinking bowls, which sometimes have intricate and well-executed designs. These, however, are obtained by trade from the Canelos tribe to the north.

The fermentation jars are the largest vessels made, averaging about ten to thirteen gallons in capacity. These jars, covered with a drinking bowl or banana leaf, serve to store the fermenting manioc or chonta palm fruit beer. Next in size are the cooking jars, the largest of which are employed to boil the hallucinogenic *Banisteriopsis* for resident or visiting shamans. The other chief ceramic vessels are food-serving bowls and the two sizes of drinking bowls. Small pottery or gourd jars serve to store the curare blowgun dart poison. One special miniature pottery bowl is used by old men to brew an emetic tea from *Ilex* sp. leaves.

Large long-handled gourds hold water for cooking and

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home-woven kilts wear the newer of the pair. Less frequently, a man also possesses a pair of trousers for special wear (see Plate 16). A few women, who have obtained machine-manufactured cloth, make their own "party dresses." Sometimes a man has an Achuara-made kilt, which he saves for visiting.

Families lacking woven cloth make kilts and dresses from bark cloth. Such clothing is much inferior in durability, and is considered an indication of family indolence and weakness.

Nunui

Agricultural subsistence, especially, is connected with a system of belief which surrounds an "earth mother" named *Nunui*. Whether *Nunui* is best viewed as a class of crop fairies or as a goddess appears to be a difficult matter to decide.[1] On the one hand, the Jivaro usually speak of *Nunui* in the singular, but they deny that there is just one, saying that there are "many," although all are identical in their attributes. For convenience, *Nunui* will be referred to here in the singular.

Nunui, it is believed, is responsible for pushing the crops up through the ground, i.e., for their growth. Without her help, a woman cannot expect to be successful as a gardener and, therefore, engages in various practices to attract *Nunui* to the garden, and to keep her there. Such practices are based upon a knowledge of *Nunui*'s two main demands from the Jivaro: to be given a place to dance and to be provided with "babies."

It is believed that *Nunui*, who is about three feet high, very fat, and dressed in a black *tsuchi*, according to those who have seen her in dreams and hallucinogen-induced visions,

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likes to come out at night and dance in the gardens, which, of course, are the only unobstructed clearings in the forest. She is most attracted to brand-new gardens with a minimum of growth and, in fact, such open spaces are so attractive that many Nuŋuí may come to dance simultaneously in such a clearing. However, normally there is only one Nuŋuí associated with a single garden and she dances alone between the manioc plants, in turn dancing as a partner with each pair of the opening shoots of manioc. As long as the garden is well weeded, she will probably stay at the site, remaining underground during the day. Her continued presence assures that she will be pushing up the crops, including all the domesticated plants. If, however, the woman responsible for the garden fails to weed it adequately, Nuŋuí will withdraw deep into the ground and remove herself to some other woman's better-weeded plot, "taking" the crop with her, and also causing the weeds suddenly to become even worse in the garden she has left. For this reason the Jívaro say they must weed the gardens carefully. Indeed, those with the best-weeded gardens do tend to have the best crop production, which is given as evidence of the validity of their belief.

With the breaking of day, Nuŋuí returns underground, going deeper as the day progresses. Since her supernatural force retreats with her, it is believed that the manioc tubers and sweet potatoes diminish in size gradually during the daytime. For this reason, the mistress of the garden prefers to dig up the tuberous crops early in the morning, while they still retain their maximum size. At the same time, going early in the morning to the garden may frighten Nuŋuí, so the woman sings a song of propitiation to reassure Nuŋuí and to keep her from submerging more deeply. Sometimes the woman simply thinks the song without opening her mouth,

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for it is believed that Nuŋuí can hear it this way as well. A typical version is as follows:

> I am a woman of Nuŋuí.
> Therefore I sing,
> So that the manioc will grow well.
> For when I do not sing,
> There is not much production.
> I am of Nuŋuí.
> Therefore I harvest faster than others.

In addition to providing Nuŋuí with a dancing place and treating her with respect through songs, the mistress of the garden provides her with "babies" to encourage her to remain at the garden. These are three red stones which appear to the women in hallucinogen-induced visions and dreams as babies for Nuŋuí. The stones, which are chips of unworked red jasper, are known as the "stones of Nuŋuí" or the "stones of manioc" and supposedly can only be found through having a dream in which Nuŋuí appears and tells the woman, "I am hiding a 'stone of manioc' in such-and-such a place." Then the woman must go out early in the morning, before eating, to find the stone, because if she were to delay, it would disappear as Nuŋuí made her morning withdrawal down into the earth. Only one such stone is found as a result of a given dream, and each is jealously hoarded. They are hidden in the center of the garden under an overturned food-serving bowl. A myth explaining the origin of this practice is as follows:

In the olden time there was no manioc or any other agricultural crop. The people just ate the leaf of the *aŋuti* [a species of the Araceae]. In that time many people died of hunger. Since they were hungry, they said, "Let us go to this stream. Let us catch crabs." As they caught crabs, they followed the stream

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The introduction of machetes and steel axes has made woodworking and tree felling more efficient and rapid. The formerly tedious work of felling trees for garden clearings with the aboriginal stone axes has been described by Up de Graff for the Jivaroan "Antipas" (a neighborhood of the Aguaruna or Huambisa) among whom he resided in the late nineteenth century:

> If you saw the one-handed stone axes which are the only tools these people have with which to fell the enormous trees, many of them three to five feet in diameter, to make their clearings (often five acres in extent), you would wonder how it were possible to accomplish this feat. It is a feat of patience rather than of skill. The wood is not cut, but reduced to a pulp, six or eight men working round one tree at the same time.
>
> The first step in making a *chacra* [Spanish: garden] is to remove the undergrowth; the soft stems are cut with hardwood machetes, what can be torn up by the roots is torn up, and the small saplings are snapped off by main force. Then the attention of the workers is turned to the larger trees. A ring is cut round the trunks of all the trees within a radius of, say, a hundred feet of some picked giant, enough to weaken them, and prepare them for the final strain which breaks them off. Finally the giant itself is attacked by a party with axes which works *for days and weeks* [emphasis supplied], until at last there comes a day when the great trunk has been eaten away sufficiently for it to crack and fall. But it does not fall alone, for it drags with it all the smaller trees in its vicinity which are bound to it and to one another by an unbreakable network of creepers among the upper branches . . .
>
> After leaving the trees to lie for several months during the dry season, the Antipas fire them, a process which eliminates all the smaller limbs and bush, leaving only the trunks, to deal with which they have no tools. I have examined the stumps of these

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fallen trees many a time; they resemble in every respect those of a clearing made by beavers.[8]

Today such "giant" trees as referred to by Up de Graff are often felled in a matter of hours by a single man employing a steel axe, or somewhat longer if he only has a machete.

Despite the increased availability of steel axes and machetes for land clearing and weeding in recent decades, the size of forest areas cleared for gardens has not become larger. In fact, garden size and agricultural production are actually reported to have decreased by perhaps a third of what they were several decades ago.[9] Specifically, elderly informants estimate that the present garden size per nuclear family is one half to three quarters of what it was in 1915. They attribute the decline in agricultural production to the disinclination of the young men to clear land "because they do not like to work hard the way their fathers did." Instead, according to the informants, the younger men have their minds fixed on acquiring shotguns, steel tools, and other goods by becoming shamans or trading partners, and also spend more time than formerly in visiting each other's houses, drinking, and engaging in pre- and extra-marital sexual adventures.

There has also been a growing tendency for each household to have several small garden plots rather than the single large garden which was previously typical. This change is attributed to the fact that the steel axe and machete are so much more efficient than the preceding stone tools that a man can now successfully work alone in tree felling without needing to call on his neighbors for help. By avoiding asking them for help, he hopes to maintain better relations with them and thereby secure their services in some more important matter. Since a man usually works alone at intermittent times, the individ-

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ual garden plots tend to be smaller than those resulting from a large sustained effort by a group of neighbors.

Within the household, the basic aspects of life seem little changed except with regard to the amount of time men spend in land clearing and weaving. In recent decades, the time spent on these activities has been reduced, respectively, by the adoption of steel cutting tools and the acquisition of Western and Achuara cloth and articles of dress through trading partnerships. A man instead spends a larger percentage of his time simply relaxing in the house, going hunting to obtain skins for trade, and visiting other households.

The period of temporary matrilocal residence has become shortened in recent decades so that it now usually ends soon after the birth of the first child. Formerly, the couple commonly remained in the wife's parents' house until after the birth of the second or third child. The factors behind this change are not clear except that some informants said that in-laws were not getting along as well as they used to do in the old days. The occasional practice of avoiding temporary matrilocal residence and bride-service, by giving the bride's father a shotgun, is reportedly a recent development.

The introduction of firearms, starting slowly at about the turn of the century, constituted a major technological change in Jivaro culture comparable in importance to the adoption of steel cutting tools. At that time, during the height of the Amazon rubber boom, a few Winchester .44 caliber carbines were acquired by the interior Jivaro from the Achuara, the firearms being captured during head-taking raids. The acquisition of great numbers of firearms by the interior Jivaro, however, is a development of only the last three decades. The new firearms, which are muzzle-loading shotguns of Spanish manufacture, and possessed by virtually every adult male, have been acquired along with gunpowder and shot by trade